

Patent Claims

1. Pressure sensor, comprising:

5 a measuring cell having

 a base plate (1),

10 a measuring membrane (2) loadable with a pressure to be measured and
connected along its edge with the base plate, and

at least one means (3, 4) for converting pressure-dependent deformation
of the measuring membrane (2) into an electrical quantity;

15 an electrical circuit (5) for registering the electrical quantity; and

 a capsule (10) having

20 a capsule body (8) and a sealing element (9), with which the capsule (10)
is hermetically sealed along a joint, wherein the capsule encloses the
circuit for protecting such from moisture, and wherein the joint of the
capsule (10) is mechanically decoupled from the base plate (1).

25 2. Pressure sensor as claimed in claim 1, wherein the base plate of the
measuring cell comprises a crystalline or ceramic material, especially
corundum.

3. Pressure sensor as claimed in claim 1 or 2, wherein the electrical
quantity is a capacitance between electrodes (3, 4), respectively, on the

measuring membrane (2) and on the base plate (1), or a deformation-dependent resistance.

4. Pressure sensor as claimed in one of the claims 1 to 3, further
5 comprising: a housing (16), in which the measuring cell is axially clamped,
wherein the axial clamping forces of the measuring cell are not transferred
through the joint of the capsule (10).

10 5. Pressure sensor as claimed in one of the preceding claims, wherein the
capsule (10) comprises a ceramic or metal material, especially Kovar.

6. Pressure sensor as claimed in one of the preceding claims, wherein the
capsule (10) is held by electrical connection lines (6, 7), which extend
between the capsule and the measuring cell.

15 7. Pressure sensor as claimed in one of the preceding claims, wherein the
capsule (10) and/or the rear face of the base plate have/has at least one
projection (13), by way of which a defined separation is maintained
between the rear face (11) of the base plate and the capsule (10).

20 8. Pressure sensor as claimed in claim 7, wherein the at least one
projection (13) is engaged in a complementary cavity (12) on the base
plate and/or on the capsule.

25 9. Pressure sensor as claimed in one of the preceding claims, wherein
sections of surfaces of the measuring cell and capsule are treated to be
hydrophobic.